

**VADUM, A NEW GENUS OF NEARCTIC BRACONIDAE
(HYMENOPTERA)**

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Abstract.—*Vadum volatum*, a new genus and species of Diospilini (Braconidae), is described from southern Missouri and eastern Texas. It is distinguished from its nearest relatives, *Diospilus* and *Taphaeus*, by the long, narrow first metasomal tergum, the truncate toothed clypeus and the four-segmented labial palpus.

Diospilini are a small but widely distributed tribe of Braconidae placed in Helconinae and believed to be parasitic on Coleoptera larvae with few or no exceptions. There are about 10 described genera, the majority of which contain only one or two tropical species of uncertain status. Generic names representing tropical groups that I believe should be placed in Diospilini are: *Austrodolops* Blanchard, *Eudiospilus* Szepilgeti, *Parabaeacis* Granger, *Repetiodiospilus* Shenefelt, and *Westwoodiella* Szepilgeti. There is an obvious need for considerably more taxonomic work, especially on the rich tropical forest faunas, and one should not lightly add new genera. However, the Holarctic fauna is much better known, containing only a few genera: many species of *Diospilus* Haliday, a few of the doubtfully different *Taphaeus* Wesmael, and one or two each placed in *Baeacis* Foerster and *Aspigonus* Wesmael. The new genus here described differs radically from all Diospilini known to me by its extremely long and untapered first metasomal tergite and by the median elevated bilobate projection of the clypeus that appears like a truncate tooth (most Diospilini have the clypeal margin flat and evenly curved, sometimes, e.g. *Aspigonus* and *Baeacis*,

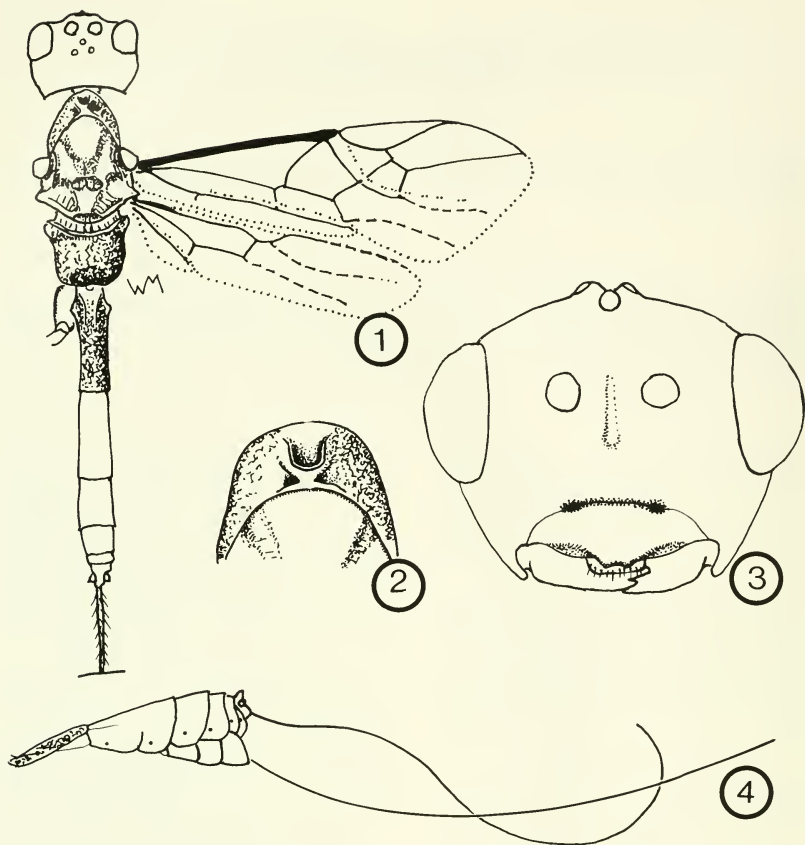
bearing a small single median point). In addition, the new genus has four-segmented labial palpi and the second flagellomere about $\frac{1}{3}$ longer than the first, features apparently unique within the tribe, where the labial palpi are usually three-segmented and the first flagellomere is normally the longest.

***Vadum* Mason, NEW GENUS**

Type species.—*Vadum volatum* Mason, new species.

Head transverse and large (Fig. 1), about 50% wider than mesoscutum between tegulae; clypeus (Fig. 3) rather flat and wide, about $3\times$ as wide as long, central quarter elevated and bilobately protruding, forming a truncate tooth-like elevation; labrum about half as wide as clypeus, its margin arcuate but flattened medially; anterior tentorial pits very large, with a deep groove between them; laterally clypeus separated from face by a distinct fine groove; mandibles not twisted, teeth subequal; maxillary palpi with 6 articles, length about equal to height of head; labial palpi short, with 4 articles; hypostomal and occipital carinae complete, meeting at a distance above mandibular opening about equal to basal width of mandible.

Pronotum (Fig. 2) medially with a U-shaped carina, which is concave ante-



Figs. 1-4. *Vadam volatum*, n. sp. 1, Dorsal aspect of ♀, wings drawn following conventions of Mason (1986). 2, Pronotum, dorsal aspect. 3, Head. 4, Abdomen of ♀.

riorly and about $\frac{2}{3}$ as wide as ocellar triangle, its arms enclosing a shallow, forward-facing cavity; propleuron with a ventrolateral lobe overlapping pronotum. Mesothorax smooth, notauli strong, rugose; transscutal groove visible medially; axillae broad, roundedly sloping down behind, lateral margin defined by a strong carina; pre-scutellar scrobe very wide and deep, with a few transverse costae; post scutellar groove

broad, transcostate; epicnemial carina strong, extending far dorsally; metapleuron and propodeum mostly rugose and bearing vague carinae.

Wings (Fig. 1) with full venation; in forewing vein M reaching R proximad to origin of Rs, i.e. 1st discoidal cell sessile; A_1 with a strong dip at which a sclerotized, tubular stump of A_2 occurs, vein a absent; veins 2RS and 2r-m weakly converging anteriorly. Vein

A₂ of hind wing absent. Legs long and slender; mid and hind tibial spurs shorter than apical depth of tibia; tarsal claws simple.

Abdomen (Figs. 1, 4) long and slender, about 1/3 as wide as thorax and a little less than twice as long. Metasoma I in dorsal view about 4 times as long as its minimum (subbasal) width; base and apex of equal width, about 10% wider than minimum; spiracles prominent, subbasal; dorsal and dorsolateral carinae conspicuous basally; ventral edges of tergite widely separated; complete first sternite about half as long as first tergite; basal strongly sclerotized part of sternite I smooth, pointed posteriorly and about 1/3 as long as tergite I; sternite 2 lying half beneath tergite I and half beneath tergite II; sculpture of tergite I completely rugose-reticulate. Remainder of metasoma smooth, apical terga extensively telescoped, metasomal terga 1-5 occupying basal 0.8-0.9 of length. Ovipositor (Fig. 4) very long and slender, about 1.6 times length of forewing or twice length of metasoma. Valvulae 2 with a subapical dorsal notch. Cerci half-dorsoid, articulated.

Life-history and immature stages unknown.

The generic name is neuter, referring to shallow water or a shoal; the specific name means turning about or rolling. The epithet commemorates the type locality, the Becker Farm, known as "Rolling Shoals."

Vadum volatum Mason, NEW SPECIES

Figs. 1-4

Clypeus (Fig. 3) confused punctate basally; median bilobate elevation shining, impunctate; apicolateral margins strongly depressed and narrowly decurved. Face and genae smooth, with sparse, fine punctures; vertex very sparsely punctate, frons impunctate, shining. Antennae long and slender, about 25% longer than forewing; basal flagellomeres about 4 times longer than wide, apical ones about 1.5 times longer than wide, very little taper; flagellum broken at article

29; first flagellomere about 75% as long as second.

Sides of pronotum broadly smooth above and below with a broad central rugulose area. Scutum and scutellum shining, punctate; notauli broad, rugulose near pronotum, deep and transcostulate centrally, merging into a large rugose area behind; mesopleuron mostly smooth but bearing a broad, sinuate rugulose groove from upper epicnemium to middle coxa.

Color.—Thorax and legs fulvous with piceous to castaneous prothorax, propodeum, hind tibia and tarsus. Head and abdomen black; mouthparts fulvous. Wings hyaline with brown veins and stigma.

Variation.—Very little in the few specimens available; flagellum of 28-32 articles; length of forewing 3.3-4.5 mm, of head and body 4-6 mm, of ovipositor sheath 5-7.5 mm; metapleuron and notauli sometimes piceous. Both males have forewing about 4 mm long and broken antennae, otherwise very similar to female in all somatic characters.

Specimens.—2 ♂, 5 ♀, as follows: Holotype ♀, Missouri, Williamsville, J. T. Becker, Malaise Trap. June 1-16, 1969. CNC No. 19357. Paratypes: 1 ♂, 2 ♀, same data but 1 ♀ dated 16-26 June (CNC). Texas, Brazos Co., College Stn., R. Wharton, Malaise Trap. 1 ♂, May 4, 1983; 2 ♀, April 11-15 and 12-25, 1981 (Tx. A.M.U.).

RELATIONSHIPS

Vadum resembles the cosmopolitan genera *Diospilus* and *Taphaeus* in most of its features and appears closely related. *Vadum* differs from the many species of *Diospilus* and *Taphaeus* by the following four features, each of which appears derived in *Vadum*: (character state for *Diospilus* and *Taphaeus* in parentheses) 1, apical margin of clypeus (Fig. 3) depressed on the lateral 0.45 so that there appears to be an elevated median bilobate tooth (margin of clypeus not depressed and bearing no such median

tooth), 2, second flagellomere distinctly longer than the first (first longer than second), 3, metasomal tergite I unusually elongated, the base and apex equally wide, length/apical width = 3.0-4.0 (metasomal tergite I broadening apically, length/apical width = 1.0-1.5), 4, in forewing vein a absent (vein a present). *Vadum* might be regarded as no more than a derived species of *Diospilus* were it not for the labial palpus which has four articles of subequal length, whereas all the species of *Diospilus* (as well as all other *Diospilini* known to me, including *Aspigonus*, *Baeacis* and *Taphaeus*)

have only three articles in the labial palpus, clearly a derived condition. Thus I believe the evidence indicates *Vadum* to be a sister group to *Diospilus* and the other three genera named above.

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LITERATURE CITED

- Mason, W. R. M. 1986. Standard drawing conventions and definitions for venational and other features of wings of Hymenoptera. Proc. Entomol. Soc. Wash. 88: 1-7.